writing new data files into the cache memory instead of the Flash EEprom memory in response to a write request from the host system;

determining the time since each data file was last written into said cache memory; and

moving first a data file having the longest time since last written first from the cache memory to the Flash EEprom memory when additional space for new data files is required in the cache memory, thereby substantially reducing the number of actual writes and associated stress to the Flash EEprom memory. .

2 ~~64~~. (Amended) A method for extending the life of Flash EEprom memory in a Flash EEprom system, comprising the steps of:

temporarily storing data files from a host system intended for the Flash EEprom memory in a cache memory, said cache memory able to undergo significantly more write/erase cycles than the Flash EEprom memory;

writing new data files into the cache memory instead of the Flash EEprom memory in response to a write request from the host system;

storing the identity of data files and the time each data file was last written into said cache memory in a tag memory; and

C1

by reference to the tag memory, moving data file having the longest time since last written first from the cache memory to the Flash EEprom memory when additional space for new data files is required in the cache memory, thereby substantially reducing the number of actual writes and associated stress to the Flash EEprom memory.

3 ~~65~~. (Amended) A method for extending the life of Flash EEprom memory in a Flash EEprom system, comprising the steps of:

temporarily storing data files from a host system intended for the Flash EEprom memory in a cache memory, said cache memory able to undergo significantly more write/erase cycles than the Flash EEprom memory;

in response to a write request from the host system, writing a data file either into the Flash EEprom memory when a previous copy of said data file is not present in the cache memory, or into the cache memory, without writing at that time into the Flash EEprom memory, when a previous copy of said data file is present in the cache memory; [and]

moving data file having the longest time since last written first from the cache memory to the Flash EEprom memory when additional space for new data files is required in the cache memory, thereby substantially reducing the number of actual writes and associated stress to the Flash EEprom memory; and

in response to read requests from the host system, reading data files from the flash EEprom memory rather than from the cache memory.

4 ~~66.~~ (Amended) A method for extending the life of Flash EEprom memory in a Flash EEprom system, comprising the steps of:

temporarily storing data files from a host system intended for the Flash EEprom memory in a cache memory, said cache memory able to undergo significantly more write/erase cycles than the Flash EEprom memory;

in response to a write request from the host system, writing a data file either into the Flash EEprom memory when said data file is last written after a predetermined period of time, or into the cache memory, without writing at that time into the Flash EEprom memory, when said data file is last written within the predetermined period of time; [and]

C1

moving data file having the longest time since last written first from the cache memory to the Flash EEprom memory when additional space for new data files is required in the cache memory, thereby substantially reducing the number of actual writes and associated stress to the Flash EEprom memory; and

in response to read requests from the host system, reading data files from the flash EEprom memory rather than from the cache memory.

5 ~~67.~~ (Amended) A method for extending the life of Flash EEprom memory in a Flash EEprom system, comprising the steps of:

temporarily storing data files from a host system intended for the Flash EEprom memory in a cache memory, said cache memory able to undergo significantly more write/erase cycles than the Flash EEprom memory;

storing the identity of data files and the time each data file was last written into said cache memory in a tag memory;

40

in response to a write request from the host system, writing a data file into the Flash EEprom memory when the data file is not identified in the tag memory, or into the cache memory when the data file is identified in the tag memory; [and]

by reference to the tag memory, moving data file having the longest time since last C1 written first from the cache memory to the Flash EEprom memory when additional space for new data files is required in the cache memory, thereby substantially reducing the number of actual writes and associated stress to the Flash EEprom memory; and

in response to read requests from the host system, reading data files from the flash EEprom memory rather than from the cache memory.

6 ~~68~~. (Amended) A method of writing data files into a system of flash EEprom cells that are programmable into more than two states in order to store more than one bit of data per cell, comprising:

temporarily storing, in a cache memory, data files from a host system intended for the flash EEprom memory;

writing new data files into the cache memory instead of the flash EEprom memory in response to a write request from the host system;

determining the time since each data file was last written into said cache memory; and

moving from the cache memory a data file having the longest time since last written, when additional space for new data files is required in the cache memory, into the flash EEprom memory by programming individual flash EEPROM cells into one of said more than two C2 programmable states.

7 ~~69~~. (Amended) A method of writing data files into a system of flash EEprom cells that are programmable into more than two states in order to store more than one bit of data per cell, comprising:

temporarily storing, in a cache memory, data files from a host system intended for the flash EEprom memory;

writing new data files into the cache memory instead of the flash EEprom memory in response to a write request from the host system;

storing, in a tag memory, the identity of data files and the time each data file was last written into said cache memory; and by reference to the tag memory, moving a data file having the longest time since last written first from the cache memory to the flash EEprom when additional space for new data files is required in the cache memory, individual flash EEPROM cells being written into one of said more than two programmable states.

8~~70~~. (Amended) A method of writing data files into a system of flash EEprom cells that are programmable into more than two states in order to store more than one bit of data per cell, comprising:

temporarily storing, in a cache memory, data files from a host system intended for the flash EEprom memory;

in response to a write request from the host system, writing a data file either into the flash EEprom memory when a previous copy of said data file is not present in the cache memory, or into the cache memory when a previous copy of said data file is present in the cache memory;

moving a data file having the longest time since last written first from the cache memory to the flash EEprom memory when additional space for new data files is required in the cache memory, thereby substantially reducing the number of actual writes to the flash EEprom memory; [and]

C2

wherein a data file is written into the flash EEPROM by programming individual cells thereof into one of said more than two programmable states; and

in response to read requests from the host system, reading data files from the flash EEprom memory rather than from the cache memory.

9~~71~~. (Amended) A method of writing data files into a system of flash EEprom cells that are programmable into more than two states in order to store more than one bit of data per cell, comprising:

temporarily storing, in a cache memory, data files from a host system intended for the flash EEprom memory;

in response to a write request from the host system, writing a data file either into the flash EEprom memory when said data file is last written after a predetermined period of time, or into the cache memory when said data file is last written within the predetermined period of time; [and]

42

moving from the cache memory a data file having the longest time since last written, when additional space for new data files is required in the cache memory, into the flash EEprom memory by programming individual flash EEPROM cells into one of said more than two programmable states; and

in response to read requests from the host system, reading data files from the flash EEprom memory rather than from the cache memory.

10 ~~72~~. (Amended) A method of writing data files into a system of flash EEprom cells that are programmable into more than two states in order to store more than one bit of data per cell, comprising:

temporarily storing, in a cache memory, data files from a host system intended for the flash EEprom memory,

C2

storing, in a tag memory, the identity of data files and the time each data file was last written into said cache memory;

in response to a write request from the host system, writing a data file into the flash EEprom memory when the data file is not identified in the tag memory, or into the cache memory when the data file is identified in the tag memory;

by reference to the tag memory, moving data file having the longest time since last written first from the cache memory to the flash EEprom memory when additional space for new data files is required in the cache memory; [and]

wherein a data file is written into the flash EEPROM by programming individual cells thereof into one of said more than two programmable states; and

in response to read requests from the host system, reading data files from the flash EEprom memory rather than from the cache memory.

Please add the following new claims:

~~--73.~~ 11 A method of a host computing system utilizing a mass data storage system that includes a non-volatile flash EEprom system to store data files, comprising:

C3

writing individual new data files from the host to a cache memory provided as part of the mass data storage system without writing the new data files to the flash EEprom system, selecting a data file stored in the cache memory based upon a length of time since the data file was last written into the cache memory,

writing the selected data file from the cache memory to the flash EEprom system, and

when written into the flash EEprom memory, reading a data file requested by the host system from the flash EEprom system rather than from the cache memory.

12 ~~74~~. The method of claim 11 ~~73~~, wherein the individual new data files are written into a volatile random-access-memory as the cache memory.

13 ~~75~~. The method of claim 11 ~~73~~, wherein the individual new data files are written into a memory separate from the flash EEprom system as the cache memory.

14 ~~76~~. The method of claim 11 ~~73~~, wherein each of the steps thereof is accomplished within the mass data storage system.

15 ~~77~~. The method of claim 14 ~~76~~, wherein the mass data storage system provides an ATA interface with the host computing system.

16 ~~78~~. The method of claim 14 ~~76~~, wherein the mass data storage system is provided on a card that is electrically and mechanically removably connectable with the host computing system.

c3 17 ~~79~~. The method of any one of claims 11-16 ~~73-78~~, wherein selecting a data file and writing the selected data file to the flash EEprom memory is caused to occur when additional space for new data files is required in the cache memory.

18 ~~80~~. The method of claim 17 ~~79~~, wherein writing the selected data file to the flash EEprom system includes programming individual memory cells of the flash EEprom system into exactly two states in order to store exactly one bit of data per cell.

19 ~~81~~. The method of claim 17 ~~79~~, wherein writing the selected data file to the flash EEprom system includes programming individual memory cells of the flash EEprom system into more than two states in order to store more than one bit of data per cell.

20 ~~82~~. The method of any one of claims 11-16 ~~73-78~~, wherein writing the selected data file to the flash EEprom system includes programming individual memory cells of the flash EEprom system into exactly two states in order to store exactly one bit of data per cell.

21 ~~83~~. The method of any one of claims 11-16 ~~73-78~~, wherein writing the selected data file to the flash EEprom system includes programming individual memory cells of the flash EEprom system into more than two states in order to store more than one bit of data per cell.